

WHAT IS CLAIMED IS:

- 10 1. A photocatalytic powder comprising titanium dioxide fine particles comprising an anionically active substance, wherein the fine particles have an electrokinetic potential of from about -100mV to -10mV in an aqueous environment at pH 5, and wherein the titanium dioxide fine particles are obtained by a vapor phase reaction or a wet-hydrolyzing.
- 15 2. A photocatalytic powder comprising titanium dioxide fine particles comprising an anionically active substance, wherein the fine particles have an electrokinetic potential of from about -100mV to -10mV in an aqueous environment at pH 5, and wherein the crystal form of the titanium dioxide fine particles is anatase and/or brookite.
- 20 3. The photocatalytic powder according to claim 1 or 2, wherein the fine particles have a primary particle size of about 0.001 to about 0.1 μ m. ~
4. The photocatalytic powder according to claim 1, wherein the vapor phase reaction or wet-hydrolyzing employs titanium halide as a starting material.
5. The photocatalytic powder according to claim 2, wherein the titanium dioxide fine particles comprise a composite crystal-system fine particle of anatase and brookite.
6. The photocatalytic powder according to claim 1 or 2, wherein the
5 anionically active substance is at least one substance selected from the group consisting of condensed phosphoric acid, organic sulfonic acid, sulfuric acid and hydrofluoric acid.
7. An aqueous slurry comprising water and the photocatalytic powder claimed in claim 1 or 2. ~
- 10 8. An organic polymer composition comprising an organic polymer and the photocatalytic powder claimed in claim 1 or 2. ~
9. A coating agent comprising a binder and the aqueous slurry claimed in claim 7. ~
10. A photocatalytic functional molded article obtained by molding the
15 organic polymer composition claimed in claim 8. ~
11. A photocatalytic functional structure comprising a structure having provided on the surface thereof the photocatalytic powder claimed in claim 1 or 2. ~
12. A photocatalytic functional structure comprising a structure having ~

20 provided on the surface thereof the coating agent claimed in claim 9.

13. A coating layer comprising the photocatalytic powder claimed in claim 1 or 2.

14. The photocatalytic functional structure according to claim 11, wherein the structure is selected from the group consisting of paper, plastic, 25 cloth, wood, body coating of a car, wall material, glass, billboard and road construction concrete. 2

15. The photocatalytic functional structure according to claim 12, wherein the structure is selected from the group consisting of paper, plastic, 2 cloth, wood, body coating of a car, wall material, glass, billboard and road construction concrete. 2

16. The photocatalytic powder according to claim 1 or 2, wherein metals are supported on the surface of the titanium dioxide fine particle. 2

17. The photocatalytic powder according to claim 16, wherein the metal comprises at least one metal selected from the group consisting of platinum, 2 rhodium, ruthenium, palladium, silver, copper and zinc. 2

18. The organic polymer composition according to claim 8, selected, wherein the organic polymer is at least one polymer selected from the group 2 consisting of polyethylene, nylon 6, nylon 66, polyvinyl chloride, polyvinylidene chloride, polyester, polypropylene, polyethylene oxide, polyethylene glycol, 40 polyethylene terephthalate, silicon resin, polyvinylalcohol, vinyl acetal resin, polyacetate, ABS resin, epoxy resin, vinyl acetate resin, cellulose, cellulose derivatives, polyamide resin, polyurethane resin, polycarbonate resin, polystyrene resin, urea resin, fluororesin, polyvinylidene fluoride, phenol resin, celluloid, chitin, starch sheet, acrylic resin, unsaturated polyester, melamine 45 resin, alkyd resin and rayon. 2

19. The organic polymer composition according to claim 18, wherein the composition further comprises activated carbon and/or zeolite.